



Minnesota Department of Transportation

# P6 Role Loading Process

Prepared by: Project Management Unit, Office Project Management Technical support  
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Minnesota Department of Transportation  
395 John Ireland Boulevard  
Saint Paul, Minnesota 55155

Phone: 800-657-3774  
800-627-3529 (TTY, Voice, ASCII)  
[www.mndot.gov](http://www.mndot.gov)

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## 1.0 GENERAL INFORMATION

The purpose of this document is to provide guidance on role loading schedules. Role loading is a process that assigns roles and estimates the number of hours to complete a schedule activity in P6. The estimated hours are assigned to each role involved in completing the activity.

Role loading in P6 provides MnDOT with a tool to assess staffing needs at a district and statewide level. This includes:

- Identifying staffing capacity issues early, allowing us to proactively mitigate schedule impacts
- Determining how many staff it takes to deliver our program
- Determining how to better share resources across the state
- Allowing us to quickly assess our staffing capacity when new funding is introduced (e.g. Corridors of Commerce Funds)
- Providing legislators with data on how we are going to deliver future funding packages.

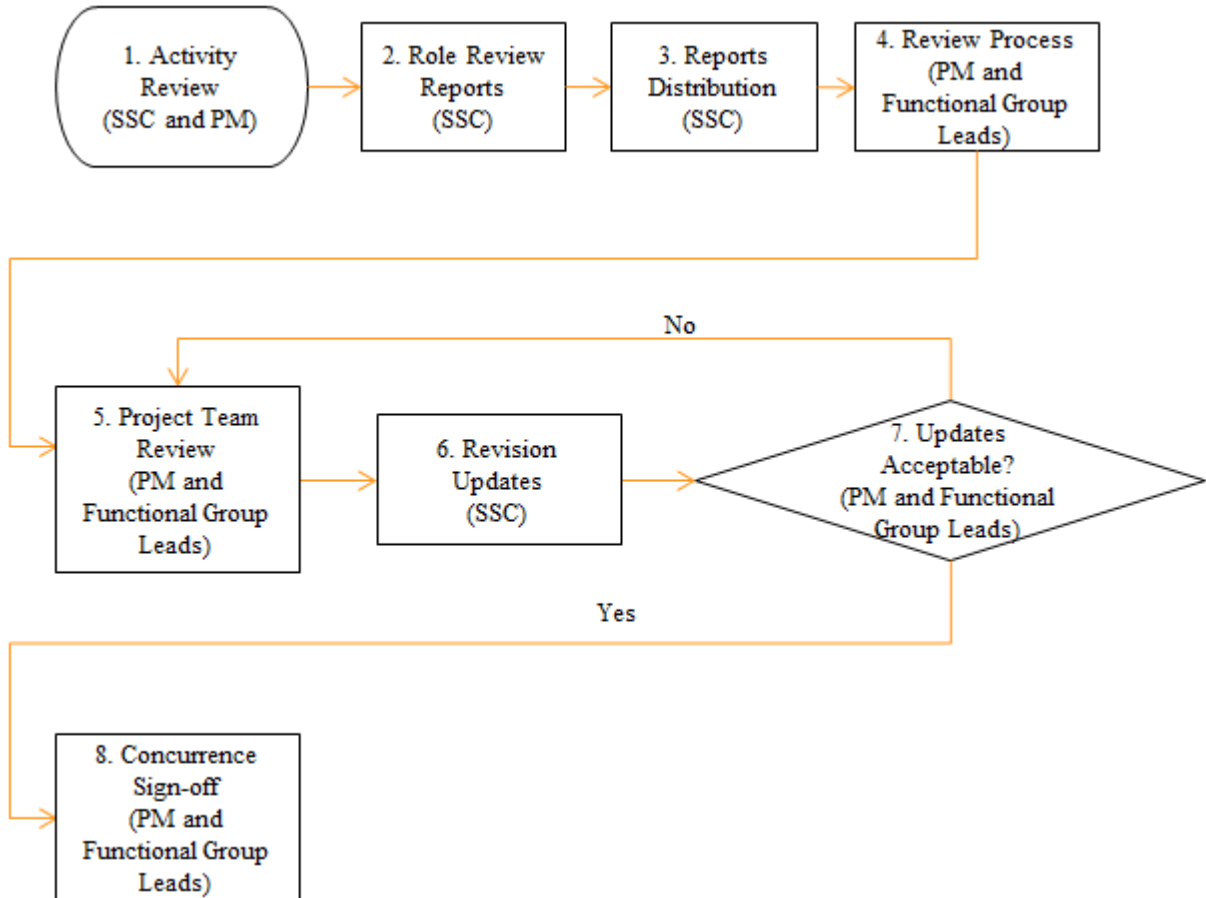
All P6 schedules, templates and work packages are role loaded. The templates and work packages are role loaded by Admin prior to releasing the work package or template for use in a P6 schedule. See [PD-00-07 Work Package Creation and Maintenance](#).

A District may choose to role load multiple schedules simultaneously. Working with the SSC, the District can customize the roles applied to their projects so all of the districts projects will use the same roles for the same task.

Project Managers will need to revise the durations, roles and role hours for their projects to tailor the work effort to the specific project needs.

## 2.0 PROJECT ROLE LOADING PROCESS SUMMARY

This section summarizes the general process for project role loading.



## 3.0 DISTRICT ROLE LOADING

District-wide role loading can be completed at the request of the District to tailor the roles, role hours and durations on the District's projects for how that district completes their work. If an activity requires staff outside of the District to complete the activity, the District will contact the functional group responsible for the work prior to modifying the roles, role hours or durations on multiple projects.

The District may want to do this the following reasons:

1. Simplify the process of role loading individual projects since the unique district roles, role hours and duration are already in the schedule.
2. Have consistent roles used on the projects in their district regardless of who the PM is
3. Roles that are not used in the district for an activity need to be removed from all district projects
4. Roles that may be missing on an activity need to be added to all district projects
5. Roles that are assigned incorrectly to an activity need to be corrected on all district projects

District-wide role loading should not be completed on baselined schedules without involving the project team.

## 3.1 DISTRICT ROLE LOADING PROCESS

1. District requests SSC to role load multiple district projects.
2. SSC will meet with district staff to identify a few typical projects that currently have schedules. See [Meeting 1 –District Role verification agenda](#) for potential meeting discussion topics.

To prepare for the meeting the SSC should:

- a. Compile a list of district projects that are not baselined
- b. Clarify the District staff comprehension of role loading. Suggested handouts include: OP-00-18\_Role Loading FAQs, OP-00-02\_Estimating Activity Durations, RD-00-07\_Role Dictionary
- c. Distribute sample reports that will be used to review roles, role hours and durations.

Two Reports commonly used are:

- i. MnDOT Role Review by Activity layout report (geared towards Project Manager)
- ii. MnDOT Role Review by Role layout report (geared towards Functional Group)

See [Sample Reports](#) and [Role Review Process for SSC](#) for additional information.

3. SSC will modify the roles, role hours and durations on the District's non-baselined projects as discussed at Meeting 1. See [Role Loading an Activity](#)
4. SSC will generate MnDOT Role Review by Activity and MnDOT Role Review by Role layout reports for the selected projects and distribute the reports to the project PMs. See [Role Review Process for SSC](#)
5. SSC will meet with district PMs to role load the individual projects. See [Project Role Loading](#).

## 4.0 PROJECT ROLE LOADING

Preliminary project schedules have roles, role hours and duration for all activities.

To quantify the work effort required on a specific project, the PM and functional groups (District and CO) will need to revise the roles, role hours and durations for each activity based on the specific needs of the project.

### 4.1 PROJECT ROLE LOADING PROCESS

The process to role load a project is:

1. **Activity Review:** PM will review the activities and confirm the appropriate roles are assigned using the RD-00-07\_Role Dictionary. SSC will update the roles as discussed with the PM and verify activities are coded to the appropriate functional group and role IDs using the RD-00-07\_Role Dictionary. If this is not thoroughly completed, the roles will not summarize correctly, possibly missing activities and showing lower role hours in the reports.

If no role is defined in the Role Dictionary for a particular activity, the PM should discuss the role with SSC. SSC will present the request to Admin. Admin team will determine if a new role will be created.

Note: Role loading will not cover every person that will work on an activity. For example, if a manager has 1 hour QA review on a large activity, the Manager's role does not need to be added to the activity.

2. **Role Review Reports:** SSC will generate the MnDOT Role Review by Activity and MnDOT Role Review by Role layout reports for the identified projects. These layouts are available in Resource Assignment Tab of P6. See the [Role Review Process for SSC](#) and [Sample Reports](#) for additional information.
3. **Report Distribution:** SSC will provide role and schedule reports to PM and Functional Group Leads.
4. **Review Process:** PMs and Functional Group Leads will complete the following review for each activity on the project.

Functional Group Leads will review the activity roles, role hours and duration for approximate accuracy based on their best judgment.

PM and Functional Group Leads should add or remove roles to represent planned work.

Role hours will be adjusted on all activities to reflect the work effort required for the specific project. Quickly estimate the number of hour based on the number of days it normally takes you to complete the activity.

For example:

- if it takes you less than a day to write a memo, use 4 hours
- if it takes you a week to a week and half to prepare a layout, use 50 hours

5. **Project Team Review:** Functional Group Leads will provide edits as redlines on the reports to the PM. PM will compile a single redline of the revisions and provide the redlined document to the SSC.

6. **Revision Updates:** SSC will update the project schedule.
7. Repeat 5-6 until you receive schedule concurrence on activity roles, role hours and duration updates.
8. **Concurrence:** PM and Functional Group Leads will concur on the role loading information. PM will inform SSC that concurrence has been obtained. The project schedule is now ready to be baselined. See [PD-10-01 Schedule Creation and Baseline Process.docx](#) for schedule concurrence and baselining process.

## 5.0 APPENDIX

The following information is further guidance, protocols, and reference materials for role loading schedules in P6.

### 5.1 DEFINITIONS

**Actual Hours** – the number of hours used; this value increases as an activity is progressed.

**Role Hours** – the number of hours estimated for a role to complete a portion of the activity

**Duration (Days)** - the number of working days it takes to complete a task under average working conditions

**Remaining Hours** – the number of hours remaining based on the progress of the activity (for an activity that hasn't started, this should equal the Budgeted Role Hours; for a completed activity, this will equal 0)

**Remaining Hours/Time** – the number of hours per day that a role would be required to work during the duration of the activity (multiple people filling a role would mitigate a number near or above 8 hours/day)

**Resource** – a named role

**Resource Loading** - a near term planning tool that is not currently required

**Role** – an un-named resource or function on a project team that one or more people can fill (one role can consist of multiple people); the role names are meant to be generic and are not intended to relate directly to any work classification.

**Role Dictionary** - a document summarizing the responsibilities, role names and role definitions for MnDOT functional groups

**Role Tree** – a field in P6 that contains all roles that have been created, the office, section, and group for which they work, and a general definition of the work that they perform

## 5.2 AGENDAS FOR DISTRICT-WIDE ROLE LOADING MEETINGS



We all have a stake in **A to B**

### Role Loading Review

Reviewing and modify preliminary loaded roles in a schedule

### Agenda

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(Meeting 1) – District Role Verification

#### 1. Activity Review – verify activities have been reviewed

#### 2. Role Review

- **Roles – Role Dictionary**
- **How they were assigned**
- **Estimation of budgeted units**

#### 2.1 Identify district specific modifications to preliminary role loading

- A. Identify 2-3 key typical projects
- B. Review preliminary roles loaded on specific activities. Identify missing or needed roles from:
  - i. Role Review by Activity Layout –project management review.
  - ii. Role review by Role Layout– functional group review.
- C. Preliminarily review of budgeted units - *order of magnitude*.
- D. Return redlines to SSC for revisions; SSC to clean up systematic changes on all District schedules.





## Role Loading Review

Reviewing and modify preliminary loaded roles in a schedule

### Agenda

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(Meeting 2) – Project or District level review

#### 1. Role Review

**Review Project(s) for specific modifications of Roles and Budgeted Units to represent the specific project** (After district wide review or on new projects).

- A. Reports
  - i. Role Review by Activity Layout – recommended for project management review;
  - ii. Role review by Role Layout– recommended for functional group review.
- B. Preliminary review of budgeted units - *order of magnitude*.
- C. Return redlines to SSC for revisions; SSC to clean up systematic changes on all District schedules.

#### 2. Reports – Ongoing Review

- D. Project level Role Reports – review for project manager or functional group
- E. Functional Group Summary reports –workload planning.
- F. Program Level Role Reports – summary district budgeted units by to determine long term staffing and consultant needs.
- G. Resource Loading
  - i. It will be available for functional groups following role loading. It has not been resolved if it will be required.
  - ii. Planning tool – keep data current for 1 year horizon, shorter term than role loading.
  - iii. Resources have been populated in P6, metro design is using.

## 5.3 SAMPLE REPORTS

Two reports are available to SSC staff for assigning with the Role Loading process. These reports are available in the Resource Assignment Tab of P6.

### Role Review Report Grouped by Role

**Contains** This report summarizes roles assigned to each activity and the associated role hours. Roles are grouped by role and Prime SP providing a list of activities by project that are directly associated with each role.

**Likely User** Functional Group

**Review** (Numbering correlates to red value on schedule)

1. Role – See Role Dictionary for definition.
2. Activity – grouped by Prime SP. Is this role on this activity?
3. Activity Original Duration (Working Days) – for reference, estimated length of work.
4. Role Hours (Role Budgeted Units) – Estimated hours this role will spend on the activity. Is the order of magnitude of the hours close?
5. Summary Roll-Up – Project Level Summary for Role and Role Level Summary over multiple projects.

MnDOT - Role Review by Role		05-Jun-14 14:08	
Activity ID	Activity Name	Activity Original Duration (Days)	Role Budgeted Units (Hours)
<b>Role: MnDOT</b>		1282	7466
<b>Role: Operations Division</b>		1262	5540
<b>Role: Regions</b>		1262	5540
<b>Role: District</b>		1262	5540
<b>Role: Traffic, Safety &amp; Technology</b>		220	173
SP 5803-35 MN23 0.1 mi NE of Duquette, Replace Bridge 5549 and Remove Box Culv		57	104
1254	TRAFFIC CONTROL PLAN	21	11
PLN3000	30% ROAD PLANS	36	31
PLN6000	60% ROAD PLANS	40	31
PLN9000	90% ROAD PLANS	25	31
SP 5804-57 MN48 4.5 MI E Jct 35 TH 48 Br 58005 Br. Approach Panel Repair		64	9
1250	ROAD PLANS	64	5
1254	TRAFFIC CONTROL PLAN	30	4
SP 5811-12 MN70 0.29 Miles E of Jct 61 to MN/WS Border, M&O, Profile Corrections, T		60	60
1140	Final Geometric Layout	60	13
PLN3000	30% Road Plans	30	47
<b>Role: Project Management</b>		1227	662
<b>Role: Project Sponsor</b>		1006	7
SP 5803-35 MN23 0.1 mi NE of Duquette, Replace Bridge 5549 and Remove Box Culv		842	2
1003	PROJECT SCOPING	32	1
MS_100	PROJECT INITIATION	1	1
SP 5804-57 MN48 4.5 MI E Jct 35 TH 48 Br 58005 Br. Approach Panel Repair		28	2
1003	PROJECT SCOPING	32	1
MS_100	PROJECT INITIATION	1	1
SP 5811-12 MN70 0.29 Miles E of Jct 61 to MN/WS Border, M&O, Profile Corrections, T		213	3
1003	PROJECT SCOPING	32	2
MS_100	PROJECT INITIATION	1	1
<b>Role: Project Manager</b>		1227	514

## ROLE REVIEW REPORT GROUPED BY ACTIVITY

**Contains** This report summarizes roles assigned to each activity and the associated role hours for a specific project. These roles are grouped by Prime SP, WBS, and then Activity.

**Likely User** Project Manager

**Review** (Numbering correlates to red value on schedule)

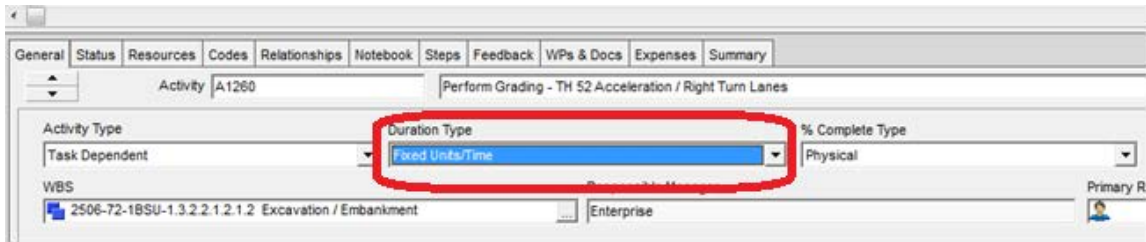
1. Activity - grouped by Prime SP and WBS.
2. Role - See Role Dictionary for definition. Is this role on this activity?
3. Activity Original Duration (Working Days) – for reference, estimated length of work.
4. Role Hours (Role Budgeted Units) – Estimated hours this role will spend on the activity. Is the order of magnitude of the role hours close? Review and revise based on Actual Project
5. Summary Roll-Up – WBS and Project Level Summary of Hours

MnDOT - Role Review by Activity				05-Jun-14 14:00	
Activity ID	Activity Name	Role	Activity Original Duration (Days)	Role Budgeted Units (Hours)	
Project: SP 5811-12 MN70 0.29 Miles E of Jct 61 to MN/WS Bo			342	2617	
WBS: 70643 F.3.3.3 Categorical Exclusion			21	156	
1070	CATEX	Project Manager	21	3	
1070	CATEX	Design Group Lead	21	3	
1070	CATEX	Design Engineer	21	5	
1070	CATEX	Senior Design Technician	21	8	
1070	CATEX	Design Technician	21	8	
1070	CATEX	Environmental Coordinator	21	39	
1070	CATEX	Environmental Hydrologist	21	6	
1070	CATEX	Wildlife Ecologist	21	6	
1070	CATEX	Wetland Regulatory Specialist	21	6	
1070	CATEX	Environmental Review Specialist	21	6	
1070	CATEX	Preconstruction Stormwater Speci	21	5	
WBS: 70643 F.3.3.3 Permits			75	91	
A1000	BWSR Permit	Environmental Group Lead	20	2	
A1000	BWSR Permit	Environmental Specialist	20	9	
A1000	BWSR Permit	Environmental Engineer	20	4	
A1000	BWSR Permit	Wetland Regulatory Specialist	20	14	
A1020	Army Corps of Engineers Permit	Environmental Group Lead	60	0	
A1020	Army Corps of Engineers Permit	Environmental Coordinator	60	2	
A1020	Army Corps of Engineers Permit	Environmental Specialist	60	2	
A1020	Army Corps of Engineers Permit	Erosion & Stormwater Specialist	60	1	
A1020	Army Corps of Engineers Permit	Environmental Engineer	60	1	
A1020	Army Corps of Engineers Permit	Preconstruction Stormwater Speci	60	3	
A1040	MPCANPDES Permit	Environmental Group Lead	30	3	
A1040	MPCANPDES Permit	Environmental Coordinator	30	9	
A1040	MPCANPDES Permit	Environmental Specialist	30	12	

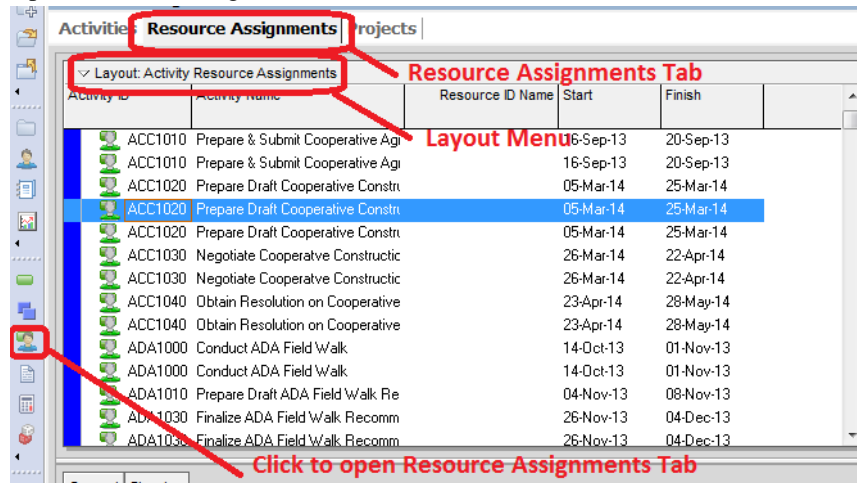
### 5.4 ROLE REVIEW PROCESS FOR SSC

To review the roles and generate the *Role Review by Activity* with spreadsheet Layout and *Role review by Role* with spreadsheet Layout reports the SSC will:

2. Check Duration Type: Preloaded role, role hours will be scaled based on Original Duration modifications. All activities in schedule should have Duration Type set to Fixed Units/Time during Activity Review and modification of Original Duration review.



3. Produce two Reports for Distribution to project managers and functional group leads
  - a. Open Resource Assignment Tab



- i. Role Review by Activity Layout report (geared towards Project Manager)
    - ii. Role Review by Role Layout report (geared towards Functional Group)

Note: Check print settings, exclude spreadsheet
4. Reset Duration Type to Fixed Duration and Units after generating reports.
5. Distribute Reports to Project Manager for project team review.
  - a. Project Manager distributes to Functional Groups and others as needed for role, role hours and duration review.
  - b. Reviewer returns revisions to project manager to compile for SSC.
  - c. Project Manager provides edit summary to SSC to update/remove unneeded roles and revise role hours per comments
6. Produce two Reports for Distribution to project managers and functional group leads for approval of revisions and review of when the work will be available using the calendar spreadsheet.
  - i. Role Review by Activity Layout report (geared towards Project Manager)
  - ii. Role review by Role Layout report (geared towards Functional Group)

Note: Check print settings, exclude spreadsheet
7. Reset Duration Type to Fixed Duration and Units after distributing reports.
8. Confirm Project Manager and functional group approve final roles, role hours, durations and when the work will occur.

## 5.5 ROLE LOADING AN ACTIVITY

To role load an activity, SSC will:

- 1.0 Select the activity to role load. Go to the Activity Details and select the Resource tab.
- 2.0 Select the add role button.

- 3.0 Change the filter to “display all roles”.
- 4.0 Select the role from the Role Tree.
- 5.0 Select the add button.
- 6.0 Adjust Role Hours

